

86.—AMPHIPERAS BREVIS.

Ovulum breve, Sowerby, Thes. Conch., vol. 2, p. 469, pl. 101, fig. 70, 71.

Hab. Darnley Island, Torres Straits, 25, 30 fathoms, sandy bottom ; Port Stephens, New South Wales (Brazier.)

87.—VOLVA VOLVA.

Bulla volva, Linn. Gmel., p. 3422, No. 2.

Ovula volva, Lam. Anim., Sans Vert, tome 7, p. 370.

Ovulum volva, Sowerby, Thes. Conch., vol. 2, p. 482, pl. 99, fig. 6, 7, 8.

Birostra volva, Chenu, Manuel de Conch., part 1, p. 273, fig. 1794.

Hab. Darnley Island, Torres Straits, 30 fathoms, sandy mud bottom ; Port Stephens, New South Wales, living specimens washed on shore after gales (Brazier).

Notes on the Entomology of New Ireland. By WILLIAM
MACLEAY, F.L.S.

THE annually increasing intercourse between Australia and the Papuan and Polynesian regions has enabled us of late years to make ourselves well acquainted with their zoological and botanical productions. Englishmen have now succeeded in establishing themselves as missionaries or traders in one or more of the islands of almost every group from New Guinea on the West to the Society Islands on the East. Our present predominating influence in these seas should not, however, make us forget how much has been done in the cause of science by other countries and in other times. Until thirty years ago it was chiefly to France that the world was indebted for what was then known of the geography and natural history of the countries of the Pacific Ocean.

From the re-establishment of Constitutional Monarchy in 1816 to its fall in 1848, France was distinguished amongst nations for the many scientific expeditions sent out by the Government, and the magnificent publications in which the results of these voyages and travels were recorded.

Among those voyages which have been most productive of results, as far as the Australasian region is concerned, may be cited that of the corvette *Uranie*, under the command of M. L. de Freycinet, in the years 1817, 1818, 1819, and 1820; that of the corvette *Coquille*, commanded by M. Duperry in 1822, 1823, 1824, and 1825; that of the *Astrolabe*, commanded by M. Dumont D'Urville, in 1826, 1827, 1828, and 1829; and that of the corvettes *L'Astrolabe* and *La Zelee*, under the command of M. J. Dumont D'Urville, and M. Jacquinot, in the years 1837, 1838, 1839, and 1840.

The zoological collections made during these voyages were very considerable, and the results were worked out by the French naturalists of the day, and published with large Atlases of Plates, at the cost of the Government. I refer now to these voyages because I have lately become possessed of a collection of insects from an island which was visited by one of the abovenamed ships—the *Coquille*—in 1823, and which may be said not to have been visited since, as far as any observation of its natural history was concerned, until the latter part of last year and the first few months of the present. Mr. Cockerell, an ardent and experienced collector of natural objects, was permitted last year to accompany a Wesleyan mission to New Ireland, and he has now returned to Sydney, after several months residence on that island, with a valuable collection of animals of all orders. The mammals, birds, reptiles, and fish of Mr. Cockerell's collection have been secured for the Australian Museum by Mr. Ramsay, who, I doubt not, will give us some account of them. The insects were purchased by me, and the following notes are intended to give a general idea of the Entomological Fauna of the island.

As might be expected from its geographical position, the insects of New Ireland belong almost entirely to families and

forms to be found either in Papua or Polynesia, but with I think a somewhat stronger affinity to the Fauna of the Polynesian sub-region.

The Coleoptera seem, as in all of these islands, to be few in point of species, though frequently of great size and beauty. The Cicindelidæ are represented by three species: a *Cicindela*, species doubtful, *Therates labiatus*, and *Tricondyla aptera*. There is only one species of the family of Carabidæ, so numerous in other parts of the globe. It resembles a *Lesticus*. A species of *Passandra*, four species of *Passalus*, and two of the Lucanidæ, seem to resemble those of the Solomon Islands, but I have not yet examined them closely. The Lamellicornes consist of six species. Of these four belong to the *Dynastidæ*, and are of large size—one very similar to the Australian *Scapanes solidarius*. The other two species are a *Silphodes*, and a large *Melolontha*. There are two handsome species of Buprestidæ, both of the *Chrysodema* group. The Elateridæ are represented by two species of *Alaus*. The Cleridæ by a *Cylidris* and an *Omadius*. There are two species of the *Bostrychidæ*—small wood-borers of the genus *Apate*.

The Heteromera number only six species. A large *Nyctobates*, an *Asida*, three species of *Amarygmus*, and a peculiar form of *Cistela*.

There are in all fourteen species of the *Curculionidæ*, three of the *Rhinoscapha* or *Eupholus* group, two of *Pachyrhynchus*, one *Orthorhinus*, one *Lixus*, one near *Tranes*, three *Cryptorhynchidæ*, one *Zygops*, one *Rhyncophorus*, and one *Sipalus*. There are six species of the *Brenthidæ*, all apparently common forms, and one of the *Anthribidæ*, a distinctly Polynesian form. As in all these countries, however, the *Longicornia* take the first place as regards size, beauty, and number. Among them there is a *Batocera*, to which even the huge *B. Wallacei*, of New Guinea, must yield the palm. One specimen is more than three inches and a half long, and its antennæ are fully three times that length. In all there are four species of *Batocera*, thirteen species of other *Lamiidæ*, for the most part large and showy insects, one *Parandra*, two *Prionidæ*, one of large size, and a few small *Cerambycidæ*, of

genera with which I am unacquainted. Three or four species of very ordinary looking *Phytophaga* complete the Coleoptera.

The collection of LEPIDOPTERA is limited almost entirely to the diurnal species, but these are remarkable even in comparison with the butterflies of New Guinea for their beauty and variety.

There are many fine specimens of a green *Ornithoptera* of great size. The females measure nine inches from tip to tip of the wings, and have a paler and more diaphanous colouration than the females of *O. Priamus*. There are also several fine specimens of *Ornithoptera Urvilliana* Guer, a blue species brought from Port Praslin by the Coquille, fifty-five years ago. A very good figure of this insect is given in the Atlas of Plates, published with the "Natural History of the Voyage of the Coquille."

Besides these there are eight species of *Papilio*, *P. Polydorus*, or a variety of it, *P. Ormenus*, a species somewhat resembling *P. Ambrax*, a variety of *P. Ulysses*, probably the *Penelope* of Wallace; *P. Sarpedon*; two species of the *P. Agamemnon* group, one of them, I believe, to be *P. Wallacei*, the other is probably new; and a very fine species resembling *P. codrus*.

The Pieridæ are poor, and very ordinary looking. One species of *Tachyris*, two of *Terias*, and one *Callidryas*, complete the list of them. Among the *Nymphalidæ* are *Cethosia obscura*, Guerin—one of the Coquille insects of 1823, and figured in the Atlas to that voyage, *Junonia Vellida*, *Precis Zehma*, *Rhinopalpa Sabina*, Cram., (figured and described in the voyage of the Coquille, under the name of *Vanessa Amelia*), *Messarax Lampetia*, *Cynthia Arsinoë*. a species of *Neptis*, *Apaturina Erminia*, Cram., a species of *Adolias*, one of *Cyrestis*, *Diadema Misippus*, *Diadema Alimena*, and a magnificent cream-coloured butterfly, which I imagine must be also a species of *Diadema*.

The *Morphinæ* are represented by numerous specimens of *Drusilla Catops*. Of the *Satyrinæ* there are six species, *Melanitis amabilis*, Boid; three species of *Mycalesis*, all unknown to me; and two species of *Ypthima*, or an allied genus.

The *Danaidæ*, as is usual in these latitudes, are well represented. There are six species of *Euplœa*, two of *Danais*, and one

of *Hamadayas*, all differing more or less from species known to me, but all having very much the general aspect of the Polynesian Fauna. One circumstance connected with this group is worth noticing. There are no specimens in the collection of *Danaïs Erippus*, Cram., an American species which a few years ago succeeded in crossing the Pacific Ocean, and establishing itself in Australia. The absence of this insect from the New Ireland collection helps to indicate the route by which it passed the ocean. Two years before the first appearance of the butterfly on the east coast of Australia, I received numerous specimens from the New Hebrides and islands to the south of that latitude, so that there is reason to assume that the general course of the migration which seems to have occupied several years, was, as regards the western portion of the Pacific, far south of the equator.

The Lycænidæ number thirteen species, all, I believe, of the genus *Cupido*; among them the *Cupido Cleo as*, Guer., figured and described in the voyage of the Coquille. There are seven species of the Hesperidæ, all of well known genera.

In all there are sixty-three species of butterflies.

Among the day-flying moths there are some gems.

There are two species of *Nyctalemon*, one probably the *N. Achillaria* of New Georgia, the other quite new to me; one new and beautiful species of *Agarista*; *Cleis posticalis*, Guer., and another species of the same genus. Of *Hyypsa* and *Nyctemera* there are several handsome species, as also of *Eumelia*, *Micronia*, *Erebus*, and *Trigonotus*.

The HEMIPTERA are neither numerous nor remarkable. A *Scutellaria*, a few species of *Reduvius*, and a few other common forms constitute the whole collection of this order.

The ORTHOPTERA seem to be of great size, and tolerably numerous. A large *Eurycantha* is the most formidable looking; the others are mostly insects of universal occurrence.

The HOMOPTERA consist only of two species of *Cicada* and a small tree-hopper.

The HYMENOPTERA of a *Pompilus* a *Bembex*, an *Odynernus*, and two *Ichneumonidæ*, one of them of a novel and very curious form.

The NEUROPTERA are represented by two species of *Libellula*.

Of DIPTERA there are only a few species, but the paucity of number is compensated for by the extraordinary appearance of one species. The head is transverse, quite twice as broad as the body, and pointed at each end, having much the shape of the "celiman" of the Australian aboriginal. The eyes occupy the pointed ends of this wonderfully-shaped head. This insect in no way resembles, and must not be confounded with the well known genus *Diopsis*, which has its eyes on a long peduncle. It belongs to the genus *Zygothrica*, of Wiedemann, a genus of which very little seems to be known except that the curiously shaped head is an ornament of the males only, the head of the female being rounded.

This brief summary of the Entomological productions of New Ireland will give the naturalist a general idea of the character of its fauna. Mr. Cockerell made the collection which I have now summarised in the period of a few months, and from a very small portion of the island. What may we not expect from a thorough and complete search of that and the adjacent island of New Britain? New Ireland extends for nearly 150 miles from north to south; and New Britain, 350 miles from east to west, and both of these islands, with the small exceptions of the collections made at Port Praslin by the Coquille in 1823, and Mr. Cockerell in 1875-1876, present an untouched and certainly a very promising and rich field for the naturalist and collector.

Notes on *Lævicardium Beechei* — by JOHN BRAZIER, C.M.Z.S.,
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LEVICARDIUM BEECHEI.

Cardium Beechei, Adams and Reeve. Zool. Moll. Voyage of H.M.S. Samarang, 1850, p. 78, pl. 22, fig. 12.

Hab. Sooloo Sea, between the island of Borneo and Mindanao, 40 fathoms; also, Yellow Sea at one of the islands of the Corean